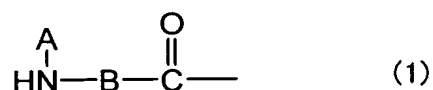


CLAIMS

1. A method of adhering a vulcanized rubber composition using a thermoplastic elastomer composition, wherein the thermoplastic elastomer composition containing a thermoplastic elastomer and a filler, and the thermoplastic elastomer having: a monomer unit forming a rubber component of the vulcanized rubber composition on at least part of its main chain; and a side chain containing a structure represented by the following formula (1) and/or a nitrogen-containing heterocyclic ring, the method comprising adhering a first member and a second member each composed of the vulcanized rubber composition through the thermoplastic elastomer composition:



(wherein A represents an alkyl group having 1 to 30 carbon atoms, an aralkyl group having 7 to 20 carbon atoms, or an aryl group having 6 to 20 carbon atoms, and B represents: a single bond; an oxygen atom, an amino group NR' (R' represents a hydrogen atom or an alkyl group having 1 to 10 carbon atoms.), or a sulfur atom; or an organic group which may contain any one of these atoms or groups).

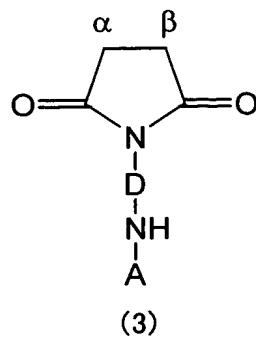
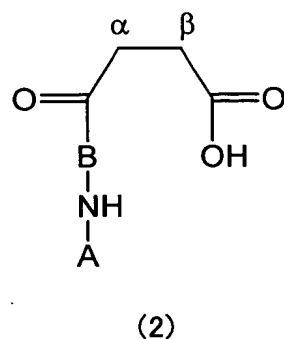
2. The method of adhering a vulcanized rubber composition according to claim 1, wherein the adhesion is performed by: applying the thermoplastic elastomer composition in a state of being molten to a surface/surfaces of the first member and/or the second member to be adhered; and subjecting a resultant to contact bonding.

3. The method of adhering a vulcanized rubber composition according to claim 1, wherein the adhesion is performed by injecting or extruding the thermoplastic elastomer composition in a state of being molten into a space between the first member and the second member.

4. The method of adhering a vulcanized rubber composition according to claim 1, wherein the adhesion is performed by: sandwiching a sheet-like product composed of the thermoplastic elastomer composition between the surfaces of the first member and the second member to be adhered; and subjecting a resultant to contact bonding under heat at a temperature equal to or higher than a temperature at which the sheet-like product melts.

5. The method of adhering a vulcanized rubber composition according to any one of claims 1 to 4, wherein the side

chain containing a structure represented by the formula (1)
 contains a structure represented by the following formula
 (2) or (3) that binds to a main chain at a position α or β :



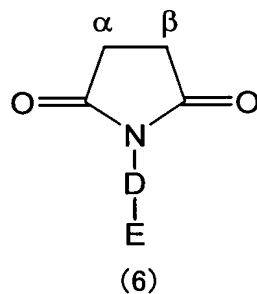
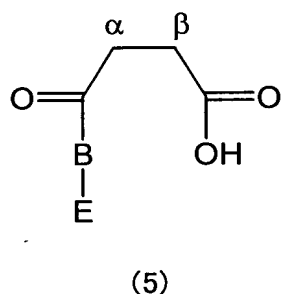
(wherein A represents an alkyl group having 1 to 30 carbon atoms, an aralkyl group having 7 to 20 carbon atoms, or an aryl group having 6 to 20 carbon atoms, and B and D each independently represent: a single bond; an oxygen atom, an amino group NR' (R' represents a hydrogen atom or an alkyl group having 1 to 10 carbon atoms.), or a sulfur atom; or an organic group which may contain any one of these atoms or groups).

6. The method of adhering a vulcanized rubber composition according to any one of claims 1 to 5, wherein the side chain containing a nitrogen-containing heterocyclic ring contains a structure represented by the following formula (4):



[wherein E represents a nitrogen-containing heterocyclic ring, and B represents: a single bond; an oxygen atom, an amino group NR' (R' represents a hydrogen atom or an alkyl group having 1 to 10 carbon atoms.), or a sulfur atom; or an organic group which may contain any one of these atoms or groups].

7. The method of adhering a vulcanized rubber composition according to claim 6, wherein the side chain containing a nitrogen-containing heterocyclic ring contains a structure represented by the following formula (5) or (6) that binds to a main chain at a position α or β :



[wherein E represents a nitrogen-containing heterocyclic ring, and B and D each independently represent: a single bond; an oxygen atom, an amino group NR' (R' represents a hydrogen atom or an alkyl group having 1 to 10 carbon atoms.), or a sulfur atom; or an organic group which may contain any one of these atoms or groups].

8. The method of adhering a vulcanized rubber composition according to any one of claims 1 to 7, wherein the nitrogen-containing heterocyclic ring comprises a five- or six-membered ring.

9. The method of adhering a vulcanized rubber composition according to claim 8, wherein the nitrogen-containing heterocyclic ring comprises a triazole ring, a thiadiazole ring, a thiazole ring, a pyridine ring, an imidazole ring, or a hydantoin ring.

10. The method of adhering a vulcanized rubber composition according to any one of claims 1 to 9, wherein the monomer unit forming a rubber component of the vulcanized rubber composition has at least one kind selected from the group consisting of ethylene, propylene, isoprene, and butadiene, and has a unit similar to the at least one kind on at least part of the main chain of the thermoplastic elastomer.

11. The method of adhering a vulcanized rubber composition according to claim 10, wherein:

the rubber component of the vulcanized rubber composition comprises an ethylene-propylene-nonconjugated diene terpolymer (EPDM); and

the thermoplastic elastomer has an ethylene unit and a propylene unit on at least part of its main chain.

12. The method of adhering a vulcanized rubber composition according to claim 11, wherein an elastomeric polymer constituting the main chain of the thermoplastic elastomer comprises an ethylene-propylene copolymer (EPM) or an ethylene-propylene- nonconjugated diene terpolymer (EPDM), or a mixture of them.

13. The method of adhering a vulcanized rubber composition according to any one of claims 1 to 12, wherein a difference between an ethylene content (mass%) of the rubber component of the vulcanized rubber composition and an ethylene content (mass%) of the thermoplastic elastomer is 25 mass% or less.

14. The method of adhering a vulcanized rubber composition according to any one of claims 1 to 13, wherein the thermoplastic elastomer composition contains 1 to 100 parts by mass of the filler with respect to 100 parts by mass of the thermoplastic elastomer.